

Application No.: 10/813,624

REMARKS

I. Introduction

In response to the pending Office Action, Applicants have added claims 20-24 in order to further clarify the present disclosure. Support for new claims 20-24 may be found, for example, in Table 1 on page 31 of the specification. No new matter has been added.

For the reasons set forth below, Applicants respectfully submit that all pending claims as currently amended are patentable over the cited prior art.

II. The Rejection Of Claims 1-3 And 19 Under 35 U.S.C. § 102/§ 103

Claims 1-3 and 19 were rejected under 35 U.S.C. § 102(e) as being anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over Higashi et al. (U.S. Pat. No. 7,045,950) and Toguchi et al. (U.S. Pat. No. 6,565,993). Applicants respectfully submit that Higashi and Toguchi both fail to anticipate, or render obvious, the above cited claims for at least the following reasons.

With regard to the present disclosure, claim 1 recites, in part, an organic electroluminescent device comprising: an organic compound layer including at least one organic compound film containing an organic compound having a phenylamino group, wherein said organic compound having a phenylamino group is produced by Ullmann reaction, and said organic compound layer contains copper atoms as impurities in a weight concentration of not higher than 500 ppm.

As is disclosed in the specification on page 18, the Ullmann reaction employs copper powder as a catalyst. Though the Office Action characterized claim 1 as a product-by-process claim, the process is one in which copper is present in the reaction composition which produces

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the compound having a phenylamino group. However, Higashi et al. and Toguchi et al. are silent concerning copper impurity. Even though Higashi et al. teach the use of copper powder in Example 1, Higashi et al. do not measure the copper powder remaining in the reaction product. Higashi et al. only look for halogen and organic impurities. In this regard, the references must be considered for all they teach, and when Higashi et al. is taken as a whole, it is clear that the 1000 ppm impurity maximum refers to organohalogen impurities, not copper impurity. As such, even if the 1000 ppm impurity maximum in Higashi referred to copper, which it does not, the 500 ppm and 200 ppm copper impurity maximum as recited in the pending claims is much less than the 1000 ppm impurity maximum. Accordingly, Higashi does not teach or suggest the claimed levels of copper impurities.

In addition, it is admitted in the Office Action that Toguchi does not disclose impurities. Furthermore, Applicants respectfully submit that silence in a reference should not be interpreted as meaning that a copper impurity is not present, as is suggested in the Office Action. Moreover, Applicants also reject the assertion that the present claims include the situation where no copper impurity is present. As is recited in claim 1, copper is expressly required ("said organic compound layer *contains copper atoms* as impurities"). Thus, as Toguchi et al. is not concerned with copper impurity and does not teach or suggest the claimed copper concentration, and as claim 1 required a presence of copper atoms as impurities, Applicants respectfully submit that Toguchi fails to disclose every limitation of the pending claims.

Accordingly, although it was alleged that it would have been obvious to use the compound of claim 1, Higashi et al. and Toguchi et al. are totally silent concerning copper impurity and therefore, there is no suggestion to limit copper impurity to no higher than 500 ppm. Moreover, as is shown in Table 1 of the specification, devices having a range of copper

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atom content within the range recited in claim 1 of the present disclosure exhibit significantly better and unexpected results in terms of the luminous efficiency and luminescent lifetime of an EL device than those outside the claimed range. As the results are superior and unexpected and as the cited prior art does not discuss the effects of varying copper atom content, the unexpected results in Table 1 of the present specification overcomes the Examiner's assertion of obvious.

As the Examiner is aware, anticipation under 35 U.S.C. § 102 requires that each element of the claim in issue be found, either expressly described or under principles of inherency, in a single prior art reference, *Kalman v. Kimberly-Clark Corp.*, 713 F.2d 760, 218 USPQ 781 (Fed. Cir. 1983). Moreover, in order to establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 180 USPQ 580 (CCPA1974). As Higashi et al. and Toguchi et al. fail to disclose an organic electroluminescent device comprising: an organic compound layer including at least one organic compound film containing an organic compound having a phenylamino group, wherein said organic compound having a phenylamino group is produced by Ullmann reaction, and said organic compound layer contains copper atoms as impurities in a weight concentration of not higher than 500 ppm, it is clear that Higashi et al. and Toguchi et al. fail to anticipate, or render obvious, claim 1. Therefore, it is respectfully requested that the rejection of claim 1 under § 102 and § 103 be withdrawn.

**III. All Dependent Claims Are Allowable Because The
Independent Claim From Which They Depend Is Allowable**

Under Federal Circuit guidelines, a dependent claim is nonobvious if the independent claim upon which it depends is allowable because all the limitations of the independent claim are contained in the dependent claims, *Hartness International Inc. v. Simplimatic Engineering Co.*,

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819 F.2d at 1100, 1108 (Fed. Cir. 1987). Accordingly, as claim 1 is patentable for the reasons set forth above, it is respectfully submitted that all pending dependent claims are also in condition for allowance.

In addition, as new claims 20-24 contain limitations with regard to copper impurity levels as discussed above, Applicants submit that claims 20-24 are allowable over the cited prior art.

IV. Conclusion

Having fully responded to all matters raised in the Office Action, Applicants submit that all claims are in condition for allowance, an indication of which is respectfully solicited.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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